



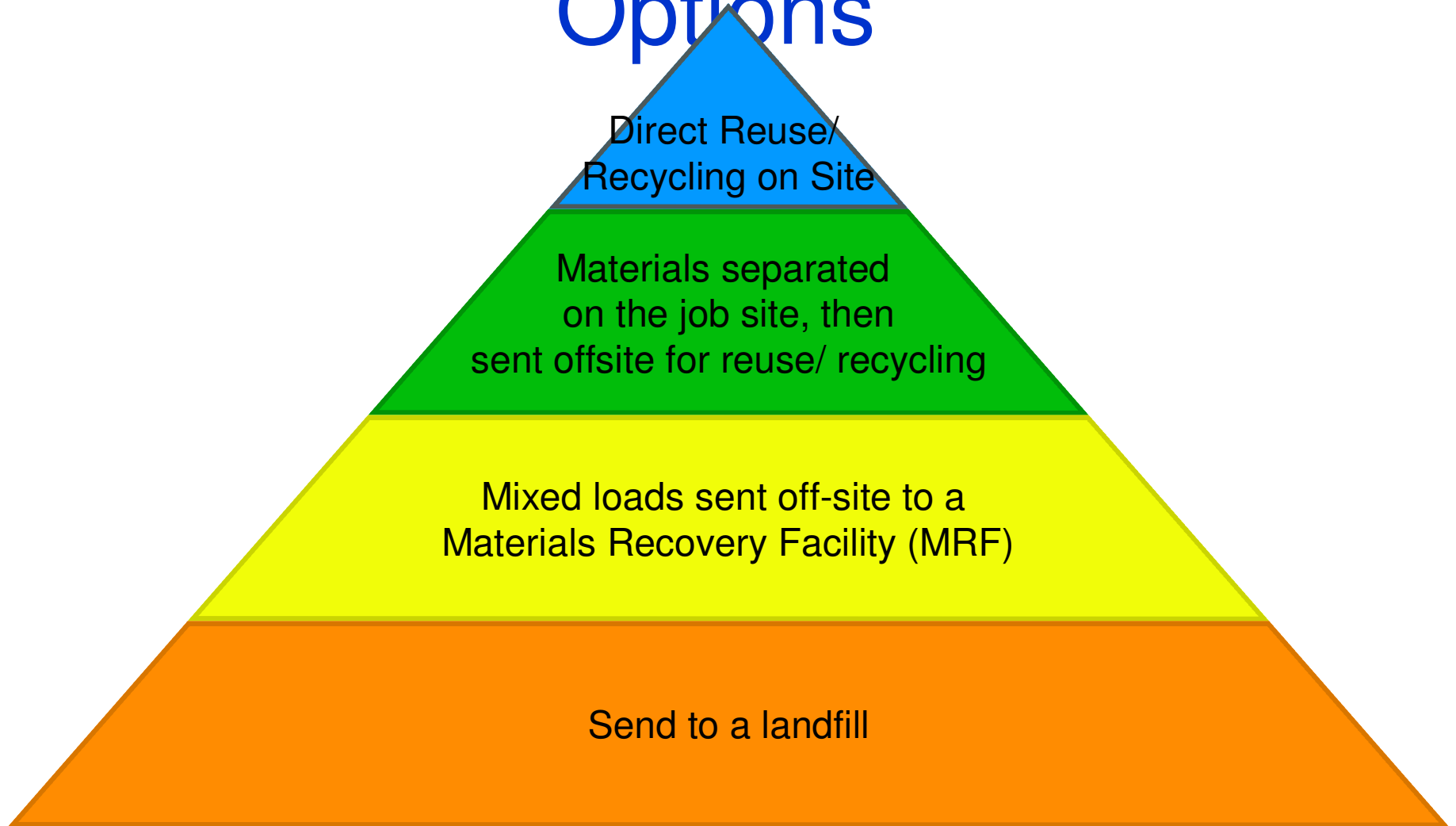
C&D Lessons Learned

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Hierarchy of Management Options



Things to Remember

- Get your project team (including architect and general contractor) on the same page.
 - Talk about goals and possibilities
 - Encourage innovation. Provide incentives for additional diversion, such as bid line items for successively greater goals.
- Require construction waste management plans
 - Describes how and where C&D materials will be managed
 - Requires the contractor to report back on how it was managed
- Track results
 - Get a baseline from existing projects
 - Determine what is easy and what areas need work
 - Tracking programs commercially available
- Report results
 - Share your lessons learned with others
 - Get recognized for your successes



Example Construction Waste Management Plan

1.3 SUBMITTALS:

A. C&D Waste Management Plan

Before the start of demolition, submit a C&D waste management plan to the Owner and the architect for approval and it shall include the following:

1. Indicate how the Contractor proposes to recover at least 75% of the C&D wastes for reuse and recycling.
2. The C&D Waste Management Plan should coordinate the recovery effort with the construction, and renovation / demolition schedule.
3. Indicate compliance with section 1.5 QUALITY ASSURANCE.
4. Include a list of reuse facilities, recycling facilities and processing facilities that will be receiving the recovered materials (including take back by Owner or on-site auctions.)
5. If some of the materials will be donated or sold on-site auctions, describe the process and identify the organizations that may receive the materials.
6. Identify materials that are not recyclable or not recovered which will be disposed of in a landfill (or other means acceptable by the State of California and local ordinance and regulations) and explain why the materials are not recovered.
7. List the permitted landfill, or other permitted disposal facilities, that will be accepting the disposed waste materials.
8. Indicate instances or situations where compliance with the requirements of this specification do not apply or do not appear to be possible.
9. Identify each type of waste material to be reused or recycled and estimate the amount, by

Find complete examples at www.wbdg.org;

www.ciwmb.ca.gov/condemo/specs

WasteWise

- Include in your waste tracking for to achieve the WasteWise Partner of the Year Award
- Two gold achievement awards!
 - Use of industrial materials in buildings
 - Use of industrial materials in roads
- Participate in the WasteWise Building Challenge to get there

www.epa.gov/wastewise



Things to Remember

- Dispose of hazardous materials properly
- Waste reduction
 - Becoming more common in the commercial construction market
 - Incorporate early in the project planning process.
- Consider all project delivery methods available (design-build, Construction Management, others). They may achieve project goals better than a conventional design-bid-build approach.
- Separating demolition work from a new construction contract may be advantageous.
- A great deal of information is “out there” – Take advantage!

Watch out for...

- Facilities that only grind the materials to make alternative daily cover (ADC) for landfills
 - Not true “recycling”
 - Ground drywall can cause H₂S problems at landfills
- Various groups are in the process of creating a third-party certification process for recyclers

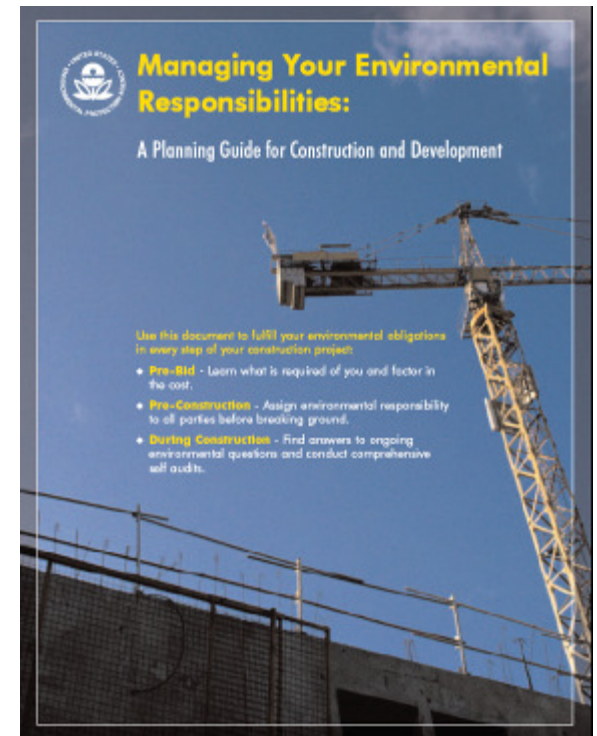
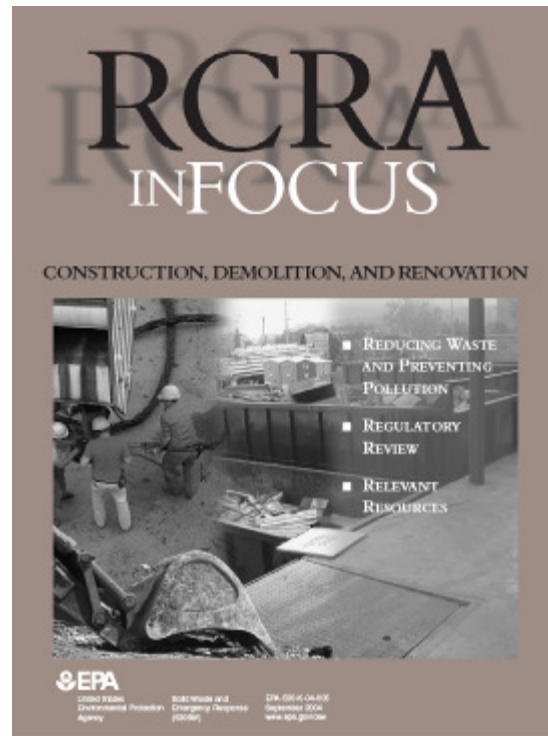
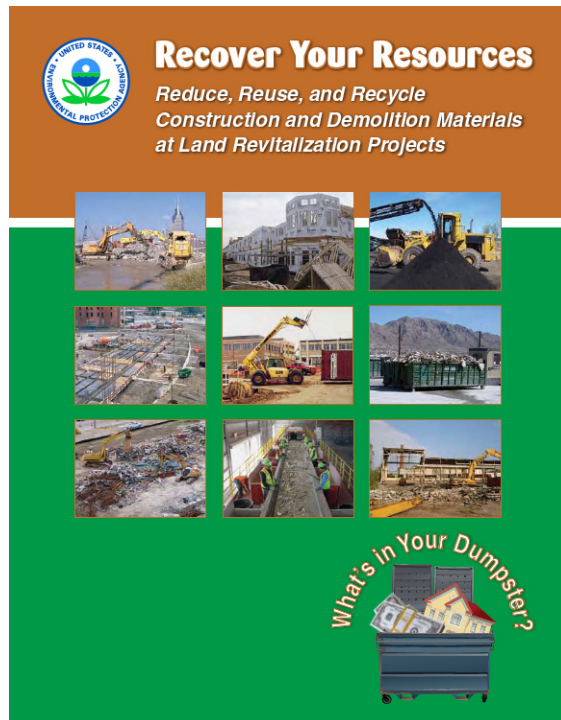
EPA's Efforts to Increase Recovery

- Working with stakeholders to increase markets for recycled materials (such as drywall).
- Working with stakeholders to develop tools for:
 - State recycling information
 - Environmental and economic assessments
- Working with green building and green product standards to reward those who utilize recycled content and those who design materials for reuse and recycling.

Resources

- EPA's website – www.epa.gov/cdmaterials
- Whole Building Design Guide
- Construction Materials Recycling Association
- Building Materials Reuse Association

EPA's: Publications



Available on our website: www.epa.gov/cdmaterials

EPA's WaRM Model

- EPA's WaRM calculates GHG reductions from through recycling
- Currently adding more C&D materials

Material	Baseline Scenario					Alternative Scenario				
	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Generated	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted
Aluminum Cans	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
Steel Cans	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
Copper Wire	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
Glass	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
HDPE	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
LDPE	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
PET	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A
Corrugated Cardboard	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A	0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N/A

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